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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/564,043

06/30/2006

Patrick Pichat

P/3425-34

5755

2352 7590 03/12/2010  
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EXAMINER

EIDE, HEIDI MARIE

ART UNIT

PAPER NUMBER

3732

MAIL DATE

DELIVERY MODE

03/12/2010

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/564,043	<b>Applicant(s)</b> PICHAT ET AL.	
	<b>Examiner</b> HEIDI M. EIDE	<b>Art Unit</b> 3732	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 19 February 2010.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-21, 23 and 25-29 is/are pending in the application.
- 4a) Of the above claim(s) 4-9, 14-16 and 20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 10-13, 17-19, 21, 23 and 25-29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)         | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on February 19, 2010 has been entered.

### ***Specification***

Support for originally filed claim 25 cannot be found in the specification, however, the claims as filed in the original specification are part of the disclosure and, therefore, if an application as originally filed contains a claim disclosing material not found in the remainder of the specification, the applicant may amend the specification to include the claimed subject matter (see MPEP 2163 I B).

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-3, 10-13, 17-19, 21, 23, and 25-29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Art Unit: 3732

Claim 1 recites the limitation "the discharge nozzle for the air-powder mixture" in various locations in the claim. There is insufficient antecedent basis for this limitation in the claim.

Claim 1 recites the limitation "the discharge nozzle for the fluid" in various locations in the claim. There is insufficient antecedent basis for this limitation in the claim.

Claim 1 recites the limitation "the outlet cross section" in line 5. There is insufficient antecedent basis for this limitation in the claim.

Claim 29 recites the limitation "the discharge nozzle for the air-powder mixture" in various locations in the claim. There is insufficient antecedent basis for this limitation in the claim.

Claim 29 recites the limitation "the discharge nozzle for the fluid" in various locations in the claim. There is insufficient antecedent basis for this limitation in the claim.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3, 10-13, 21, 23 and 27-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Karst (4,950,160) in view of Goldman et al.

Art Unit: 3732

(6,485,303) in view of Kutsch et al. (6,325,624) in view of Ito et al.

(2001/0031441).

Karst teaches a nozzle piece for a dental powder apparatus adapted for an exchangeable assembly on a handpiece and having a discharge nozzle for a fluid as well as a discharge nozzle for discharging a mixture of air and a dental powder suitable for cleaning teeth in the area of a gum pocket, wherein a front partial length at the outlet cross section of the discharge nozzle for the air powder mixture projects from a grip on the nozzle piece connected to the hand piece wherein the front partial length is formed as a first tube 44 having a longitudinal axis and an outer peripheral surface and is of a size for being inserted into a gum pocket, wherein the discharge nozzle for the fluid is formed as a second tube 52 having a second longitudinal axis, wherein the mouth of the discharge nozzle for the fluid is axially displaced backwards with respect to the discharge nozzle for the air-powder mixture (figs. 1-2). Karst teaches the invention as substantially claimed and discussed above, however, does not specifically teach the outer peripheral surface of the first tube is provided with a plural of nozzle openings, wherein the front partial length first tube of the discharge nozzle for the air-powder mixture has a oval or elliptical cross-section, wherein the longitudinal axis of the second tube of the fluid discharge nozzle is displaced laterally toward one side from the longitudinal axis of the first tube of the discharge nozzle for the air powder mixture and the second tube has an outer peripheral surface that is disposed adjacent the outer peripheral surface of the first tube.

Goldman teaches a handpiece wherein the longitudinal axis of the second tube 52 of the fluid discharge nozzle is displaced laterally toward one side from the longitudinal axis of the first tube 57 of the discharge nozzle for the air powder mixture and the second tube has an outer peripheral surface that is disposed adjacent the outer peripheral surface of the first tube (fig. 6a). Goldman shows the handpiece wherein the tubes are adjacent to each other (fig. 6a) are equivalent to the structure wherein one tube is encircled the other tube (fig. 9). Therefore, because these two arrangements were art-recognized equivalents at the time the invention was made, one of ordinary skill in the art would have found it obvious to substitute the structure of one tube being encircled with the other tube for the structure of the two tubes being adjacent to each other.

Karst/Goldman teaches the invention as substantially claimed and discussed above, however, does not specifically teach the outer peripheral surface of the first tube is provided with a plural of nozzle openings and wherein the front partial length first tube of the discharge nozzle for the air-powder mixture has an oval or elliptical cross-section.

Kutsch teaches a handpiece wherein the outer peripheral surface of the first tube is provided with a plural of nozzle openings (figs. 2a-2d). It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the tube taught by Karst/Goldman with the tube taught by Kutsch in order to prevent clogging and provide both visual and tactile feedback to the user.

Karst/Goldman/Kutsch teaches the invention as substantially claimed and discussed above, however, does not specifically teach the front partial length first

Art Unit: 3732

tube of the discharge nozzle for the air-powder mixture has an oval or elliptical cross-section.

Ito teaches the front partial length first tube of the discharge nozzle for the air-powder mixture has an elliptical cross-section (par. 61, fig. 6a). It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the cross section of the tube taught by Karst/Goldman/Kutsch with the elliptical cross section taught by Ito in order to provide the mixture to the desired surface in the form of a flat stream. Furthermore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify the shape of the tube since it has been held that such a modification involves only routine skill in the art (*In re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966) MPEP 2144.04 IV B).

Karst further teaches the front end of the first tube is provided with an axial nozzle opening, wherein the tube- shape front partial length of the nozzle piece has an arched shape ending at the nozzle opening of the discharge nozzle (figs. 1-2), the first tube is composed of a single-use product exchangeably mounted on the grip (i.e. the tube is capable of being disposed of after one use) and wherein the first tube is held by a holding piece 32 which is rotatable relative to the grip (col. 3, ll. 28-33). Karst teaches the invention as substantially claimed and discussed above, however, does not specifically teach the nozzle openings are arranged in a common radial plane of the tube and are spaced in regular distances along the corresponding circumference of the tube, the nozzle openings are arranged in at least two different radial planes of the tube and in

Art Unit: 3732

that the nozzle openings in one radial plane are twisted with respect to the nozzle openings in the other radial plane in the circumferential direction of the tube, wherein the nozzle openings are slot-shaped and wherein a defined longitudinal axis of the slot-shaped nozzle openings is parallel to the main axis of the tube, and wherein in the radial plane of the tube at least three nozzle openings are disposed along the corresponding circumference of the tube and wherein the fluid discharge nozzle is provided with a diffuser shaped outlet cross section.

Kutsch teaches the nozzle openings are arranged in a common radial plane of the tube and are spaced in regular distances along the corresponding circumference of the tube, wherein the nozzle openings are slot-shaped and wherein a defined longitudinal axis of the slot-shaped nozzle openings is parallel to the main axis of the tube, and wherein in the radial plane of the tube at least three nozzle openings are disposed along the corresponding circumference of the tube (figs. 2a-2d). It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the tube taught by Karst/Goldman with the tube taught by Kutsch in order to prevent clogging and provide both visual and tactile feedback to the user. Karst/Goldman/Kutsch teaches the invention as substantially claimed and discussed above, however, does not specifically teach the fluid discharge nozzle is provided with a diffuser shaped outlet cross section.

Ito teaches a nozzle a diffuser shaped outlet cross section (fig. 5). It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the nozzle taught by Karst/Goldman/Kutsch with a diffuser



Art Unit: 3732

outlet taught by Ito in order to direct the fluid to the desired surface in a flat stream as preferred by the user.

Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Karst (4,950,160) in view of Goldman et al. (6,485,303) in view of Kutsch et al. (6,325,624) in view of Ito et al. (2001/0031441) as applied to claim 13 above, and further in view of Bailly et al. (5,336,202).

Karst/Goldman/Kutsch/Ito teaches the invention as substantially claimed and discussed above, however, does not specifically teach the axial nozzle opening is asymmetrically formed in order to deflect the discharged air-powder mixture jet from the axis of the tube.

Bailly teaches the axial nozzle opening is asymmetrically formed in order to deflect the discharged solution from the axis of the tube (col. 4, ll. 34-29). It would have been obvious to one having ordinary skill in the art at the time of the invention to modify axial nozzle taught by Karst/Goldman/Kutsch/Ito with the axial nozzle having an asymmetrical opening as taught by Bailly in order to direct the solution from the tube in a desired direction preferred by the user.

Claims 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Karst (4,950,160) in view of Goldman et al. (6,485,303) in view of Kutsch et al. (6,325,624) in view of Ito et al. (2001/0031441) as applied to claim 13 above, and further in view of Maurer et al (2,709,852).

Art Unit: 3732

Karst/Goldman/Kutsch/Ito teaches the invention as substantially claimed and discussed above, however, does not specifically teach a deflection body is provided at the axial nozzle opening, the deflection body directing the discharge air-powder mixture against the treated tooth surface and wherein the deflection body is interchangeably mounted on the tube.

Maurer teaches a deflection body is provided at the axial nozzle opening, the deflection body directing the discharge air-powder mixture against the treated tooth surface and wherein the deflection body is interchangeably mounted on the tube (figs. 1-2, col. 3, ll. 46-54). It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the axial nozzle taught by Karst/Goldman/Kutsch/Ito with a deflection body as taught by Maurer in order to direct the solution in a desired path preferred by the user.

Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Karst (4,950,160) in view of Goldman et al. (6,485,303) in view of Kutsch et al. (6,325,624) in view of Ito et al. (2001/0031441) as applied to claim 1 above, and further in view of Schulz et al (5,059,121).

Karst/Goldman/Kutsch/Ito teaches the invention as substantially claimed and discussed above, however, does not specifically teach the tube shaped front partial length of the nozzle piece is made of a material behaving atraumatically regarding its hardness and surface texture, in particular of polycarbonate.

Schulz teaches a handpiece comprising a nozzle being made of polycarbonate (col. 4, ll. 26-33, col. 5, ll. 36-39). It would have been obvious to

Art Unit: 3732

one having ordinary skill in the art at the time of the invention to modify the material of the nozzle piece taught by Karst/Goldman/Kutsch/Ito with the material taught by Schulz in order to produce a nozzle which is cost efficient to produce. Furthermore it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice (*In re Leshin*, 227 F.2d 197, 125 USPQ 416 (CCPA 1960), MPEP 2144.07).

Claim 26 rejected under 35 U.S.C. 103(a) as being unpatentable over Karst (4,950,160) in view of Goldman et al. (6,485,303) in view of Kutsch et al. (6,325,624) in view of Ito et al. (2001/0031441) as applied to claim 1 above, and further in view of Linder (5,188,617).

Karst/Goldman/Kutsch/Ito teaches the invention as substantially claimed and discussed above, however, does not specifically teach at least one of a scale and a color partitioning for marking the position of the nozzle opening relative to the main axis of the hand piece is provided on the tube shaped front partial length of the nozzle piece.

Linder teaches a scale 19 on the tube shaped front partial length 17 of the nozzle piece 4. It would have been obvious to one having ordinary skill in the art to modify the nozzle taught by Karst/Goldman/Kutsch/Ito with the scale as taught by Linder in order to measure a distance while the device is in use.

Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Karst (4,950,160) in view of Kutsch et al. (6,325,624) in view of Ito et al. (2001/0031441).

Karst teaches a nozzle piece for a dental powder apparatus adapted for an exchangeable assembly on a handpiece and having a discharge nozzle for a fluid as well as a discharge nozzle for discharging a mixture of air and a dental powder suitable for cleaning teeth in the area of a gum pocket, the nozzle openings are arranged in at least two different radial planes of the tube and in that the nozzle openings in one radial plane are twisted with respect to the nozzle openings in the other radial plane in the circumferential direction of the tube, wherein a front partial length at the outlet cross section of the discharge nozzle for the air powder mixture projects from a grip on the nozzle piece connected to the hand piece wherein the front partial length is formed as a first tube 44 having a longitudinal axis and an outer peripheral surface and is of a size for being inserted into a gum pocket, wherein the discharge nozzle for the fluid is formed as a second tube 52 having a second longitudinal axis, wherein the mouth of the discharge nozzle for the fluid is axially displaced backwards with respect to the discharge nozzle for the air-powder mixture (figs. 1-2). Karst teaches the invention as substantially claimed and discussed above, however, does not specifically teach the outer peripheral surface of the first tube is provided with a plural of nozzle openings and wherein the front partial length first tube of the discharge nozzle for the air-powder mixture has a oval or elliptical cross-section.

Art Unit: 3732

Kutsch teaches a handpiece wherein the outer peripheral surface of the first tube is provided with a plural of nozzle openings (figs. 2a-2d). It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the tube taught by Karst with the tube taught by Kutsch in order to prevent clogging and provide both visual and tactile feedback to the user. Karst/Kutsch teaches the invention as substantially claimed and discussed above, however, does not specifically teach the front partial length first tube of the discharge nozzle for the air-powder mixture has an oval or elliptical cross-section.

Ito teaches the front partial length first tube of the discharge nozzle for the air-powder mixture has an elliptical cross-section (par. 61, fig. 6a). It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the cross section of the tube taught by Karst/Kutsch with the elliptical cross section taught by Ito in order to provide the mixture to the desired surface in the form of a flat stream. Furthermore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify the shape of the tube since it has been held that such a modification involves only routine skill in the art (*In re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966) MPEP 2144.04 IV B).

### ***Response to Arguments***

Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HEIDI M. EIDE whose telephone number is (571)270-3081. The examiner can normally be reached on Mon-Thurs.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cris Rodriguez can be reached on 571-272-4964. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Heidi M Eide/  
Examiner, Art Unit 3732

3/10/2010

/Cris L. Rodriguez/  
Supervisory Patent Examiner, Art Unit 3732